

Non-Mendelian Target Check

Checking Your Understanding!

Name: _____ Date: _____ Block: _____

1. In some varieties of Darwin Tulips, flower petal color exhibits **codominance**. When a white Darwin Tulip is crossed with a red Darwin Tulip, both colors appear independently.

Using either the letters **R & W**, or **R & r** (your preference), perform the following crosses of Darwin Tulips.

- a. Cross two Red-White flowers. Use **RW**, or **Rr** Give the phenotypic ratio.

- b. Cross a White tulip with a Red-White tulip. Give the phenotypic ratio.

2. Snapdragon flowers exhibit **incomplete dominance**.

- a. If a white flower is crossed with a red flower, what color flower will the offspring have?

- b. Cross two pink snapdragons and give the phenotypic ratio.

Flip the page over!

3. Eye color in fruit flies is a trait carried on the X chromosome. Red eyes are dominant over white eyes. A pure red-eyed female is crossed with a white-eyed male. Which offspring cannot be produced by this cross?
 - a. Red-eyed female
 - b. Red-Eyed male
 - c. White-eyed male
 - d. White-eyed female
 - e. Neither a white-eyed female nor a white-eyed male could be produced
4. A human male will normally transmit his X Chromosome to...
 - a. His sons only
 - b. His daughters only
 - c. All of his sons and daughters
 - d. Half of his sons and half of his daughters
5. Why are X-linked recessive genetic disorders more commonly seen in males?
 - a. For an X-linked disorder to occur, an individual must receive one allele only found on the X Chromosome and a second allele found only on the Y chromosome, which females do not have
 - b. Females must receive two copies of the recessive allele to exhibit the disorder, but males need only one copy.
 - c. The alleles of sex-linked genes are carried only on the Y chromosome, which females do not have.
 - d. Females only have X chromosomes and genes on the X chromosome are not expressed
6. Hemophilia is an X-linked recessive trait. In a family, the father is unaffected and the mother carries only one recessive allele. Which outcome is expected for their offspring?
 - a. All of the males will be affected
 - b. Half of the males will be affected
 - c. All of the females will be affected
 - d. Half of the females will be affected
7. In Andalusian chickens, feather color is inherited by incomplete dominance. If one parent with black feathers (BB) is crossed with a white-feathered parent (bb), all of the offspring will have blue feathers (Bb). What is the percent chance of producing blue-feathered offspring when crossing a blue-feathered hen with a white-feathered rooster?
 - a. 25%
 - b. 50%
 - c. 75%
 - d. 100%
8. Use the following information to answer question C= Normal vision, c= colorblind XX= female XY= male. Which pairing could result in a colorblind female (XcXc)?
 - a. XcXc x XCY
 - b. XCXc x XcY
 - c. XCXc x XCY
 - d. XCXC x XcY
9. Horses born to 2 palomino (golden-coated) horses have a 25% chance of having a white coat, a 25% chance of having a chestnut (brown) coat, and a 50% chance of having a palomino coat. Which description of inheritance best explains the coat color trait in these horses?
 - a. Palomino coat color is a recessive trait
 - b. Palomino coat color is a dominant trait
 - c. Coat color is an incompletely dominant trait
 - d. Coat color is a sex-linked trait